Amendments to the Specification

At page 1, before the title of the invention, insert the heading:

"TITLE OF THE INVENTION".

At page 1, after the title of the invention, insert the heading:

"CROSS-REFERENCE TO RELATED APPLICATIONS".

At page 1, after the paragraph, "This is a nationalization of PCT/GB03/003591 filed August 15, 2003 and published in English" and before the text of the specification beginning at line 4, insert the heading:

"BACKGROUND OF THE INVENTION".

At page 4, line 22, insert the heading:

"BRIEF SUMMARY OF THE INVENTION".

At page 9, line 11, insert the heading:

"BRIEF DESCRIPTION OF THE DRAWINGS", followed by the replacement drawing descriptions as follows:

Figure 1 shows a schematic diagram of apparatus of the invention for parallel capillary absorbance detection.

Figure 2 shows a collimated illumination of rectangular CCD area (26.6 x 6.7mm) using light output from a 1 mm diameter fused-silica optical fiber (N. A. = 0. 22) using a cylindrical and spherical fused-silica lens element.

Figure 3 shows the CCD and vessel arrangement of the optical assembly of the invention.

Figure 4 shows part of one CCD snapshot showing ~ 3mm of 4 capillaries (100 μm i.d., 194 μm o.d.); the total area imaged is 6.7 x 26.6 mm. The contents of the capillaries are: 1) Air, 2) Water, 3) and 4) ink solution.

Figure 5 shows light beam ray tracing diagram according to the invention showing light path through a water filled capillary (100 μm i.d., 194 μm o.d.). The dark rays represent the light passing through the water at the capillary centre and the light rays show the light that passes only through the capillary walls. The dashed line shows the approximate position of the fiber optic stud surface.

Figure 6 shows light beam tracings-not-according-to the invention showing light path through an air filled capillary (100 μm i.d., 194 μm o.d.).

Figure 7 shows light beam tracings according to the invention showing light path through a water filled capillary (75 μm i.d., 194 μm o.d.).

Figure 8 shows light beam tracings not according to the invention showing a light path through a water filled capillary (75 μm i.d., 364 μm o.d.).

Figure 9 shows electropherograms of ~16 nL of 100 microM 4-nitrophenol injected into each of four parallel 100 μm i.d. capillaries. Capillary length: 500 mm total, 300 to the detector. Separation voltage: 5000 V. Buffer: sodium phosphate pH 7.5 (15 mM sodium).

Figure 10 shows electropherograms of 100 microM 4-nitrophenol after correction for cross-talk between capillaries.

Figure 11 shows electropherograms of ~16 nL of 1 microM 4-nitrophenol injected into each capillary.

Figure 12 shows an electropherogram generated by taking the average of the four traces shown in Figure 11.

Figure 13 shows peak imaging and variance for a sample of rhodamine 700 injected onto a capillary and migrated by CE to the detection zone which is imaged by laser induced fluorescence with a CCD. The voltage is turned off (at delta t=0) and the peak broadening due to diffusion is monitored for 1800 s (top). The change in peak variance is plotted against time (bottom).

Figure 14 shows a schematic of a possible arrangement for closed loop feedback control. The output from a liquid chromatography system is monitored during a first pass of the area detector. Peak recognition and decision making software can instruct the switching valve to direct the appropriate fraction for collection or for example to a mass spectrometer interface. After the appropriate switch the eluent is monitored again in a second pass of the detector so that the efficiency of the switching process can be monitored. An alternative would be to have more of the outputs from the switching valve passing the detector for visualization.

Figure 15 shows as illumination pattern perpendicular to the capillary axis created by light passing through the core of a 75 μm i.d., 194 μm o.d. capillary, positioned 260 μm from the detection surface. Plots are shown for the capillary containing water and acetonitrile (at 20 °C, sodium D line); the difference in the illumination pattern would allow the direct determination of the mobile phase composition during a gradient elution separation. Acetonitrile at 44 °C has the same refractive index as water does at 20 °C; the same approach could be used to determine the mobile phase velocity by applying a heat pulse upstream of the detector.

Figure 16 is a diagram showing an optical assembly clip-on device of the invention showing the approximate dimensions for absorbance detection according to the invention, such as CE or absorbance. A module device of the invention would differ by comprising a capillary with interfacing means to insert into a capillary e.g. from a microLC or into a mass spectrometer.

Figure 17 shows elevations of capillary array type vessels and detection means of an optical assembly of the invention."

Insert after the description of Figure 17, the following heading:

"DETAILED DESCRIPTION OF THE INVENTION".

At page 14, line 27 to page 15, line 6, please replace the paragraph as follows:

"The array may comprise fixed or variable spacers between each sample vessel for adjusting spacing of emergent beams B in a sequence for vessels1 2 3 etc, as shown in Figure ~~A~~ 17, having wall w and core c, for example wherein each beam corresponds to an array detection location:

Blw B1c Blw B2w B2c B2w B3w B3c B3w...

If desired, adjacent wall beams may be coincident: Blw Blc Blw/B2w B2cB2w/B3w B3c B3w/..."

At page 35, lines 6-7, replace the paragraph as follows:

"The invention is now illustrated in non limiting manner with respect to the following examples ~~and Figures wherein~~".

Delete the paragraphs beginning at page 35, line 10 to page 37, line 14.